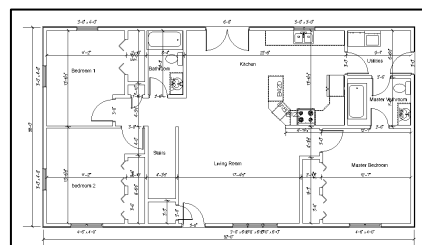


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### **1.0 Purpose & Scope**

This document describes the SHSD Industrial Hygiene Group (IHG) procedure for reviewing project plans and documenting the items that were evaluated and the conclusions of the reviewer.

The goal of the procedure is to provide a standardized protocol for documenting the review process to achieve uniformity among the items reviewed from an acceptable criteria set. The review criteria are meant to be a guide and not a comprehensive or all encompassing checklist.

This procedure covers two distinct types of reviews including: initial design review of engineering drawings with written specifications; and the Health and Safety Plan provided by the selected contractor, which incorporates hazards and controls during construction. Construction/renovation projects conducted by BNL personnel will be evaluated under the SBMS and plant engineering standard procedures. The criteria for assessment are the same, however, may be conducted on a narrower scope.

The initial design review incorporates a facility design review primarily from the drawings and notes for regulatory compliance. This will include such items as: hood specifications and placement, eyewash/shower placement, door swing direction, single pass ventilation and make up air, placement of HVAC intakes vs toxic exhausts or cooling towers, etc.

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In addition to the drawing review, written specifications will describe and detail the extent of work and contract requirements (eg. compliance with ACGIH TLVs, OSHA, no asbestos products to be used in construction, appropriate training and competent person oversight, etc). During the initial review hazardous materials that were previously identified are referenced and slated for removal or part of the construction contract.

The initial specification will require that after award of the contract a Health and Safety Plan (HASP) be submitted to BNL prior to construction. This document will identify the previously noted hazardous materials, if part of the contract, as well as identify hazardous materials and operations that are part of the construction activities. These may include chemicals brought onsite (eg. PVC pipe adhesives, fuel for power equipment, solvents for paint removal, etc.) and activities such as saw cutting concrete, tarring roofs or demolition (dust generating activities).

Work under the contract will affect: the contract labor force including subcontractors; BNL oversight personnel; and adjacent workers. Each of the affected populations requires adequate protection and control measures are to be documented in the HASP. Especially important to note is the affect on occupants during partial occupancy.

## **2.0 Responsibilities**

- 2.1 **Program Administration:** This procedure is administered through the SHSD Industrial Hygiene Group.
- 2.2 Members of the SHSD Industrial Hygiene Group that provide BNL with project review services are required to follow this procedure.

## **3.0 Definitions**

**Industrial Hygiene Professional:** A person designated by the Safety and Health Services Division Manager to conduct industrial hygiene hazard assessments and that has met the qualification requirements set by the BNL Unified IH Qualification criteria set in IH50300.

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#### **4.0 Prerequisites** See qualification in Section 7.

#### **5.0 Precautions**

**Personal Protective Equipment:** Personal protective equipment is not required for plan reviews.

#### **6.0 Procedure**

- 6.1 Equipment: Office supplies (including: file cabinets, folders, computers, and electronic media).
- 6.2 Review the plans using the *Standardized Criteria* in Attachment 9.1.
- 6.3 Prepare a written report (email or memorandum) citing the deficiencies in the plans or concurrence with the plans.
- 6.4 The IH Professional distributes a copy of the review to the SHSD Design Review Coordinator.
- 6.5 Record Retention: The *IH Professional* maintains documentation in the following manner:
  - The original memorandum or email on the review is maintained by IHG [Document & Record Custodian](#) in a manner approved by BNL record retention policy and in compliance with OSHA and DOE regulations.
  - The *IH Professional* may keep unofficial copies of the files for personal reference. These are to be marked "COPY".

#### **7.0 Implementation and Training**

**Qualification Criteria:** Only individuals who have knowledge of this procedure and extensive experience in IH hazard assessments or certification in industrial hygiene will be

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qualified to review Design Plans for IH hazards. Personnel are to meet the performance measures set forth in ***Attachment 9.2 JPM Qualification record***. This qualification is to be completed on a three year cycle.

## 8.0 References

## 9.0 Attachments

- 9.1 Design Criteria
- 9.2 Job Performance Measure form - HP-IHP-60700

## 10.0 Documentation

Document Development and Revision Control Tracking		
PREPARED BY: <i>(signature and date on file)</i> R. Selvey Date: 02/16/06	REVIEWED BY: <i>(signature and date on file)</i> J. W. Peters Date: 04/12/06	APPROVED BY: <i>(signature and date on file)</i> R. Selvey; IH Manager Date: 04/24/06
ESH Coordinator/ Date:  <i>none</i>	Work Coordinator/ Date:  <i>none</i>	SHSD Manager / Date  <i>None</i>
QA Representative / Date:  <i>none</i>	Training Coordinator / Date:  <i>none</i>	Filing Code: <b>IH52</b>
Facility Support Rep. / Date:  <i>none</i>	Environ. Compliance Rep. / Date:  <i>none</i>	Effective Date: <b>04/24/06</b>
ISM Review - Hazard Categorization <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low/Skill of the craft	Validation: <input type="checkbox"/> Formal Walkthrough <input type="checkbox"/> Desk Top Review <input type="checkbox"/> SME Review Name / Date:	IMPLEMENTATION: Training Completed: tracked in BTMS Procedure posted on Web: 04/24/06 Hard Copy files updated: 04/24/06

<p align="center"><b>BROOKHAVEN NATIONAL LABORATORY</b> Safety &amp; Health Services Division</p> <p align="center"><b>INDUSTRIAL HYGIENE GROUP</b> Standard Operating Procedure</p>	<p>NUMBER <b>IH60700</b></p>
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Revision Log		
<p>Purpose: <input type="checkbox"/> Temporary Change <input type="checkbox"/> Change in Scope <input type="checkbox"/> Periodic review <input checked="" type="checkbox"/> Clarify/enhance procedural controls</p> <p>Changed resulting from: <input type="checkbox"/> Environmental impacts <input type="checkbox"/> Federal, State and/or Local requirements <input type="checkbox"/> Corrective/preventive actions to non-conformances <input checked="" type="checkbox"/> none of the above</p> <p>Section/page and Description of change: Modified Attachment 9.1 into a format that provides more clarification as to what a "checked" box meant. The form now also provides a "comment/recommendation" section. Revision was made based on worker feedback in training session.</p>		
<p>Robert L. Selvey, CIH 05/6/06 SME Reviewer/Date:</p>	<p>Reviewer/Date:</p>	<p>Reviewer/Date:</p>

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## **Attachment 9.1**

### **Sample of Specification & Design Criteria Checklist**

The following information is to be incorporated into a review and evaluation of Construction & Renovation Designs, Specifications and Health and Safety Plans.

**(See next page for sample.  
Refer to the SHSD SOP Web Page  
for the current text editable version.)**

## Review of Construction & Renovation Designs, Specifications, and Health & Safety Plans

Project Title:		<input type="checkbox"/> Design Drawings <input type="checkbox"/> Design Specifications <input type="checkbox"/> Health & Safety Plan
Review by:	Date:	

**I. Worker Protection needed during construction-** Ensure the specifications and plans address the following:

	Acceptable	Not Acceptable	Not Applicable
A. Identify the applicable occupational exposure limits/industrial hygiene standards, including ACGIH, OSHA, and DOE Exposure Standards e.g., 8-hour time-weighted average (TWA) concentration, short-term exposure level (STEL), peak or ceiling concentration, or average sound pressure level dBA, and Action Levels.			
B. Commit to monitor for occupational exposure limits and to provide BNL with copies of assessment results and reports.			
C. Commit to provide BNL with information on the exposure determination, including			
D. Commit to communicate with workers or building occupants impacted by			
E. Commit to use low hazard materials such as isocyanate and epichlorohydrin to avoid avoidance of			
F. State the required PPE			
G. Describe any required additional control measures, (including engineering, administrative, work practice controls, and/or personal protective equipment), to reduce worker exposure.			
H. Determine if the construction will trigger a need for Medical Surveillance.			
I. Determine if the construction will trigger a need for new or additional Training for the exposed workers.			
J. Require all chemicals brought onsite to be stored, and handled safely. MSDSs are to be readily available to all workers on site.			
K. Require all work changes to be thoroughly evaluated for safety concerns prior to implementation.			
L. Require all workers to be fully informed of the hazards and controls.			
M. Identify measures to be taken if unforeseen hazards are encountered.			
N. Provides a clear chain of command for safety and health activities (safety and health personnel).			
O. Provides an Emergency Response Contingency Plan and Emergency Action Plan			
P. Identifies the need for, and documents, specific plans required by regulations such as: confined space program, respiratory protection program, etc.			

**Sample**  
**Refer to the SHSD SOP Web Page**  
**for the current text editable version.**

**II. Design ramifications on future or current occupancy-** Ensure the specifications and plans address the following:

	Acceptable	Not Acceptable	Not Applicable

	Not Applicable	Not Acceptable	Acceptable
A. HVAC system is designed to provide adequate makeup air for the occupancy of the building.			
B. HVAC system in laboratory and chemical use areas is one-pass, and is designed to prevent chemical laden air from entering areas where chemicals are not used or to be re-entrained into a recirculation HVAC supply.			
C. Toxic exhaust systems are located as necessary for source of hazards.			
D. Laser facilities have appropriate interlock systems designed.			
E. Compressed gas lines are constructed of the proper materials depending on the gas involved.			
F. Monitors are set up and appropriate for the gases involved.			
G. Toxic Exhaust ventilation systems are designed with single pass and adequate make up air to maintain negative pressure in chemical use areas and to prevent chemical laden air from re-entraining into a recirculation HVAC supply.			
H. Toxic Exhaust ventilation systems with a laboratory hood containment design are acceptance certified by the contractor.			
I. Toxic Exhaust ventilation (PA filter, or scrubber) are specified in accordance with the manufacturer's specification for collection efficiency.			
J. Toxic Exhaust ventilation (PA filter, or scrubber) are designed to meet the manufacturer's specification for collection efficiency.			
K. Chemical use areas are designed to meet ANSI Z358.1 specification, including tepid water delivery, travel distance and obstruction-free pathway from the chemical use point(s) to the emergency equipment.			
L. Occupied areas are provided with adequate restroom and lunchroom facilities for the planned occupancy of the building.			
M. Specialty areas are designed for the specific hazards.			

**Sample**  
**Refer to the SHSD SOP Web Page**  
**for the current text editable version.**

## Revisions or Corrective Actions Recommended

Review Item #	Document Reference (Page or Section#)	Comment/Recommendation



# HP-IHP-60700

Environmental, Safety, Health & Quality Directorate  
SHSD Industrial Hygiene

## Construction Project and HASP Design Review Job Performance Measure (JPM) Completion Certificate

Candidate's Name	Life Number:
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### SHSD Procedure Knowledge

Practical Skill Evaluation: Demonstration of Evaluation Methodology

Criteria	Qualifying Performance Standard	Unsat.	Recov.	Satisf.
1. <b>Exposure Standards</b>	Demonstrates knowledge of each applicable occupational exposure limit, action level, TLV, PEL, STEL, etc.			
2. <b>Design Review Criteria</b>	Demonstrates sufficient knowledge of the principles in Attachment 9.1 as to items to be included in plans, drawings, and specifications.			
3. <b>Hazard Analysis</b>	Demonstrates understanding and knowledge of design drawings as well as the various types of IH hazards, conditions, and essential steps in performing a meaningful hazard analysis of the planned project.			
4. <b>Analysis of data</b>	Shows how to perform the data analysis to assess potential exposure to workers before, during and after construction.			
5. <b>Assessment Report Content</b>	Demonstrate the knowledge that all items in Attachment 9.1 must be addressed in the assessment report and states commitment to meet its requirements.			
6. <b>Distribution of copies</b>	Demonstrates how to correctly distribute the evaluation to the appropriate ESH professional(s).			

I accept the responsibility for performing this task as demonstrated within this JPM and the corresponding SOP.

Candidate Signature:	Date:
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I certify the candidate has satisfactorily performed each of the above listed steps and is capable of performing the task unsupervised.

Evaluator Signature:	Date:
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